

INDUSTRIAL FISHERY PRODUCTS

SITUATION & OUTLOOK

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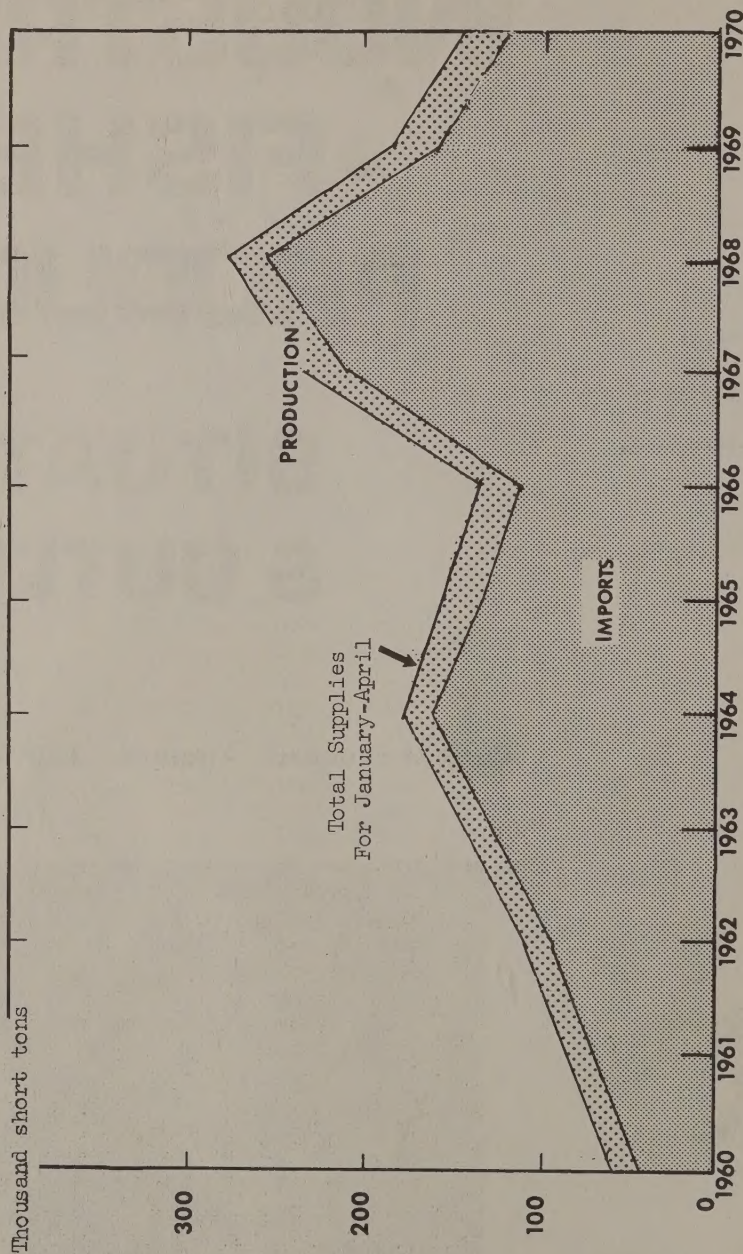
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U.S. PRODUCTION, IMPORTS, AND TOTAL SUPPLIES OF FISH MEAL, JANUARY—APRIL 1960—70



U.S. Department of the Interior Neg. Econ. 377-70(5) Bureau of Commercial Fisheries

Figure 1

INDUSTRIAL FISHERY PRODUCTS

SITUATION AND OUTLOOK

Approved by the

Bureau of Commercial
Fisheries Situation
and
Outlook Board

June 26, 1970

Division of Current
Economic Analysis ^{1/}

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SUMMARY

FISH MEAL

The total amount of fish meal available in the United States in January-April 1970 was 136,700 tons ^{2/}--down one-fourth from last year. The decline was mainly due to a decrease in imports caused by the relatively high price of fish meal. Domestic production of fish meal during the first 4 months of 1970 was down about 20 percent from the same period a year ago.

World production of fish meal in January-March 1970 was an estimated 1,077,200 metric tons (1,187,400 short tons)--up 12 percent from 1969. Member countries of FEO ^{3/} produced about 94 percent of the world fish meal. Peru made most of the fish meal--754,600 metric tons (831,800 short tons)--the highest first quarter production on record, and 75 percent of the total FEO production. FEO countries exported an estimated 759,200 metric tons (836,900 short tons) of fish meal in January-March 1970. Peru shipped about 81 percent of total FEO exports. Only 5 percent of total FEO exports went to the United States during the first quarter of 1970--compared to 10 percent in 1969. West Germany took 24 percent of FEO's exports of fish meal during the first quarter of 1970--compared to 18 percent last year.

Fish meal stocks held by FEO countries on April 1, 1970, were an estimated 590,700 metric tons (651,100 short tons)--up 51 percent

^{2/} Short tons are used in this report unless otherwise specified.

^{3/} Fishmeal Exporters Organization: member countries are Angola, Chile, Iceland, Norway, Peru, South Africa and South West Africa.

from the low stocks of January 1 and down only 4 percent from the stocks held on April 1 last year. Peru held about 75 percent of the total FEO stocks on April 1, 1970.

Although the placements of broiler chicks--the major consumers of fish meal--were about 11 percent higher during the first 4 months this year than last year, the apparent use of fish meal during this period was less than a year ago. This decrease was mainly due to the relatively high prices of fish meal and high ratios between the price of fish meal and the prices of competing feed ingredients. The price of menhaden meal increased from the January average of \$195 per ton, f.o.b. East Coast ports to the average of \$197.50 in April. Prices of Peruvian meal as quoted at New York City averaged \$197.50 per ton, f.o.b. East Coast ports in January and \$200.50 in April. The April price of Peruvian meal was about 36 percent higher than the average April price a year ago. Main reasons for the high prices were strong demand for fish meal in Europe and uncertainty concerning supply of fish meal from Peru.

Although placements of broiler chicks will likely continue to exceed the year ago placements, use of fish meal is expected to be below last year. We estimate that about 135,000 to 170,000 tons of fish meal will be used in the United States (including additions to U.S. stocks) during the third quarter of 1970, and that domestic production for July-September will be 80,000 to 100,000 tons and imports 55,000 to 75,000 tons. The import estimate assumes that the New York price of Peruvian fish meal will average around \$195 per ton during the third quarter of 1970.

The total amount of fish solubles available in the United States in January-April 1970 was 8,700 tons, about the same as last year. Most was produced domestically. About 424 tons of fish solubles were imported in the first 4 months of 1970.

Increasing prices of menhaden solubles and higher than a year ago imports indicate increased demand for solubles during the first 5 months of 1970. The average price of menhaden solubles increased from \$51.25 per ton in January to \$54.70 per ton in May f.o.b. East Coast and Gulf plants.

We estimate that 30,000 to 50,000 tons of fish solubles will be produced in the United States in the third quarter of 1970.

FISH OIL

Stocks of fish oil on May 1, 1970, were 36.6 million pounds, about 46 percent higher than the low April 1 stocks of 25.0 million pounds. U.S. production of fish oil in January-April 1970 was about 5 million pounds--36 percent below the production of the first 4 months of 1969.

About 11.2 million pounds of fish oil were used in the United States for industrial products other than animal feed during January-April 1970--the same as a year ago. U.S. exports of fish oil were down from last year but higher than the most recent 5-year average for January-April exports.

Prices of fish oil increased during the first 5 months this year both in the United States and in Europe. In May the average price of menhaden oil was 10.3 cents per pound f.o.b. Gulf plants--the highest monthly average price on record.

We estimate that 6 to 8 million pounds of fish oil will be used in the United States in the third quarter of 1970--somewhat less than a year ago.

Domestic production of fish oil during July-September 1970 is expected to be about 70 to 90 million pounds.

FISH MEAL

REVIEW: JANUARY-APRIL 1970

Supply

Fish Meal Supplies in
January-April-Down
26 Percent from 1969

The total amount of fish meal available in the United States in January-April 1970 (excluding stocks, which are not reported) was 136,700 tons--down 26 percent from 1969 and down 31 percent from the 1965-69 average (table 1 and fig. 1). This sharp decrease in supplies resulted mainly from a drop in imports but also from lower domestic production during this period. Imports of January-March were less than two-thirds of last year, but April imports reached about 95 percent of imports of the same month a year ago. Domestic production of fish meal also decreased from last year, but because of the relatively lower imports, the share of total available fish meal in January-April coming from domestic production this year was about 15 percent--compared to 14 percent a year ago.

Fish Meal Production-Down
20 Percent from Last Year

The United States produced about 20,900 tons of fish meal in January-April 1970--down 20 percent from 1969 and down 10 percent from the 1965-69 average. About 12,200 tons or about 59 percent of the 4-month production of fish meal came from anchovies, mackerel, and tuna. This quantity was 8 percent more than last year (table 3). The increase was due

mainly to the improved landings of anchovy.

The 1969-70 season for the California anchovy reduction fishery was the most productive in its 5-year history. Total anchovy landings for the season were about 83,515 tons--3 times the landings in the 1968-69 season and over 12 times the landings of 1967-68.

The season began on August 1, 1969, in the northern area of California and on September 15 in the southern area. All areas closed May 15, 1970.

The initial catch quota was 75,000 tons. At the end of 1969, landings were about two-thirds of the quota. The California Fish and Game increased the quota to 140,000 tons. Although exceeding the initial quota, the catch was only about 60 percent of the increased quota. The lower catch was partly attributable to closures of some areas when sports and bait fishermen requested the California Fish and Game Commission to relieve a claimed shortage of anchovies for live bait.

Before the season's opening, the vessel owners and the reduction plant operators agreed to an exvessel price of \$20 per ton--same as was paid during the first two seasons of the fishery, 1965/66 and 1966/67. The exvessel price for the 1967/68 season was \$16 per ton, and for the 1968/69 season, \$17 per ton.

About 3,400 tons or 16 percent of the fish meal production in January-April 1970 was made from menhaden--compared to 18.5 percent in 1969 and the 1965-69 average of 22.5 percent (table 3).

Menhaden landings in January-April 1970 were 31.9 million pounds, 30 percent off from the previous year and 34 percent below the 1965-69 average. About 81 percent of menhaden was landed in the Gulf Coast area in January-April 1970--compared to 95 percent last year (table 5 and fig. 2). Since menhaden fishing season began in April, landings

Table 1.--Total fish meal available in the United States: production plus imports, by month, 1963-70¹

Month	1963	1964	1965	1966	1967	1968	1969 ²	1970 ²
Thousand short tons								
January	20.8	33.1	19.2	18.1	47.7	93.4	30.0	24.4
February	43.0	37.6	28.4	27.5	48.3	51.8	31.5	25.9
March	43.2	43.2	57.5	39.2	79.1	59.2	49.9	24.6
April	35.0	64.1	51.0	50.8	60.0	74.1	72.7	61.8
May	71.4	91.6	55.6	55.3	56.2	89.5	76.9	
June	53.8	83.5	93.1	82.6	74.1	111.7	88.9	
July	82.1	74.1	68.8	85.5	84.0	136.0	77.0	
August	87.7	70.0	55.8	90.8	108.4	123.6	51.8	
September	60.0	56.9	27.9	66.5	76.0	78.9	45.1	
October	49.9	28.3	17.1	46.4	61.5	69.0	38.8	
November	30.8	36.4	17.8	54.7	78.4	85.0	19.3	
December	39.7	45.5	21.0	42.8	79.2	110.2	20.5	
Total ³	617.4	664.3	513.0	660.2	852.9	1,082.3	602.5	

¹Excludes meal made from shellfish.

²Preliminary.

³Figures may not add to total because of rounding.

relate to only one month. Preliminary figures for May indicate that menhaden catch did improve and was much above last year in the Chesapeake Bay area. Total catch in April and May was about 8 percent below a year ago.

Fish in the "unclassified" category (table 3), including herring and groundfish, accounted for 5,200 tons of meal in January-April 1970 compared to 9,900 tons a year ago.

Imports of Fish Meal--Down 27 Percent from 1969

U.S. imports of fish meal in January-April 1970 were 115,900 tons--down 27 percent from 1969 and down 34 percent from 1965-69 average (tables 6 and 7). The major reason for the decrease in imports was that the relatively high price of fish meal limited its use in the United States.

About 81,500 tons of fish meal came from Peru in January-April this

year--compared to 109,900 tons a year ago. In both years, imports from Peru comprised 70 percent of total imports (table 7 and fig. 3).

Whereas U.S. fish meal imports from Peru during January-April this year were markedly below last year's comparable period, imports from Canada increased. They were 24,700 tons in the first 4 months this year--up 17 percent from a year ago. Canada's share of U.S. fish meal imports jumped from 13 percent to 21 percent during the same time. Increase in fish meal production capacity in Canada contributed to the higher exports to the United States.

About 6 percent of the imports came from Chile in the first 4 months of 1970--compared to about 14 percent in 1969. 1.5 percent came from Norway compared to 1.1 percent last year. Total shipments of fish meal from these two countries were considerably below January-April a year ago.

Table 2.--U.S. production of fish meal by month, 1963-70¹

Month	1963	1964	1965	1966	1967	1968	1969 ²	1970 ²
	Thousand short tons							
January	2.3	2.1	3.2	2.8	5.7	2.5	2.8	4.3
February	2.9	2.3	2.9	2.3	3.9	2.7	3.9	4.5
March	2.7	3.1	3.8	5.7	4.9	4.5	4.7	5.2
April	8.4	8.1	11.3	11.3	10.1	11.8	14.7	6.9
May	40.3	32.1	25.1	20.3	17.2	19.1	31.8	
June	35.3	49.0	48.6	36.9	33.5	30.8	35.5	
July	38.9	45.2	50.1	36.5	36.4	44.3	40.2	
August	43.7	33.5	42.0	31.4	33.6	36.2	33.5	
September	24.7	22.8	21.1	23.2	20.3	29.6	35.9	
October	18.5	8.6	12.3	11.0	11.4	20.2	19.1	
November	13.4	10.7	12.1	18.9	15.4	14.3	12.7	
December	10.0	7.7	9.8	12.0	9.0	11.0	9.5	
Total ³	241.1	225.2	242.3	212.4	201.4	227.0	244.1	

¹Excludes meal made from shellfish.²Preliminary.³Figures may not add to total because of rounding.

Table 3.--U.S. production of fish meal by raw material source, January-April, 1965-69 average, 1969, and 1970

Source	1965-69 average		1969		1970 ¹	
	Thousand		Thousand		Thousand	
	short tons	Percent	short tons	Percent	short tons	Percent
Menhaden ²	5.2	22.5	4.8	18.5	3.4	16.3
Tuna, mackerel, and anchovies	9.6	41.6	11.3	43.5	12.2	58.7
Unclassified	8.3	35.9	9.9	38.0	5.2	25.0
Total	23.1	100.0	26.0	100.0	20.8	100.0

¹Preliminary.²Includes a small quantity of other species.

Table 4.--Production of menhaden meal by area and by month, 1963-70¹

Month	1963	1964	1965	1966	1967	1968	1969 ²	1970 ²
Thousand short tons								
Atlantic Coast								
January	-	0.1	0.2	0.5	-	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	-	-	-	-	-
April	1.1	.9	.6	.2	1.1	1.0	0.2	0.7
May	12.8	5.4	3.9	1.1	1.9	2.7	2.4	
June	12.9	12.2	12.6	4.6	6.6	7.1	4.7	
July	13.5	11.7	8.8	6.0	6.0	10.9	6.0	
August	11.6	11.5	12.7	7.2	6.8	7.1	4.7	
September	9.8	7.2	7.5	5.8	3.5	4.9	3.2	
October	6.1	4.4	6.5	5.7	4.5	8.3	7.2	
November	8.9	7.2	8.5	14.8	10.2	9.2	7.1	
December	6.3	5.0	6.1	7.1	6.2	6.2	3.5	
Total ³	83.0	65.6	67.4	53.0	46.9	57.5	39.0	
Gulf Coast								
January	-	-	-	-	-	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	0.1	-	-	-	-
April	4.0	2.0	6.7	3.7	3.7	3.2	4.6	2.7
May	22.0	17.3	14.9	12.9	8.4	8.6	20.7	
June	16.7	27.5	27.8	22.5	16.7	15.4	23.3	
July	18.0	22.3	30.4	18.9	18.6	21.7	26.3	
August	24.4	14.5	20.7	12.4	16.4	18.4	19.3	
September	9.8	10.8	7.5	11.4	7.5	14.4	22.7	
October	6.3	.3	.6	-	.9	4.0	3.6	
November	1/	-	-	-	-	-	-	
December	-	-	-	-	-	-	-	
Total ³	101.2	94.7	108.6	81.9	72.2	85.7	120.5	
Total ³								
January	-	0.1	0.2	0.5	-	-	-	-
February	-	-	-	-	-	-	-	-
March	-	-	-	.1	-	-	-	-
April	5.1	2.9	7.3	3.8	4.8	4.3	4.8	3.4
May	34.8	22.7	18.8	14.0	10.3	11.4	23.1	
June	29.6	39.7	40.4	27.1	23.3	22.4	28.0	
July	31.5	34.0	39.2	24.9	24.7	32.6	32.3	
August	36.0	26.0	33.4	19.7	23.2	25.4	24.0	
September	19.6	18.0	15.0	17.2	11.0	19.3	25.9	
October	12.4	4.7	7.1	5.7	5.4	12.4	10.8	
November	8.9	7.2	8.5	14.8	10.2	9.2	7.1	
December	6.3	5.0	6.1	7.1	6.2	6.2	3.5	
Total ³	184.2	160.3	176.0	135.0	119.1	143.2	159.5	

¹Includes a small amount of meal from other species.²Preliminary.³Figures may not add to total because of rounding.

Table 5.--Menhaden landings by area, January-April, 1965-69 average, 1969, and 1970

Area	1965-69 average		1969		1970 ¹	
	Million pounds	Percent	Million pounds	Percent	Million pounds	Percent
Middle Atlantic	-	-	-	-	-	-
Chesapeake	2.5	5.1	-	-	-	-
South Atlantic	5.3	10.9	2.2	4.8	6.2	19.4
Total Atlantic ²	7.8	16.0	2.2	4.8	6.2	19.4
Gulf Coast	40.9	84.0	43.9	95.2	25.7	80.6
Total U.S.	48.7	100.0	46.1	100.0	31.9	100.0

¹Preliminary.

²Figures may not add to total because of rounding.

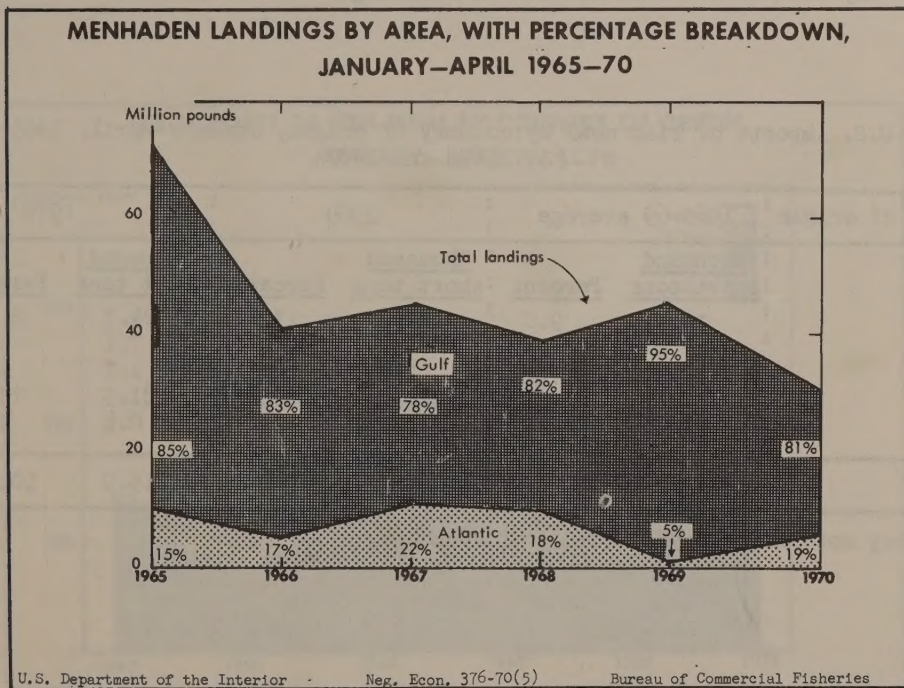


Figure 2

Table 6.--U.S. imports of fish meal by month, 1963-70

Month	1963	1964	1965	1966	1967	1968	1969 ¹	1970 ¹
	Thousand short tons							
January	18.5	31.0	16.0	15.3	42.0	90.9	27.2	20.1
February	40.1	35.3	25.5	25.2	44.4	49.0	27.6	21.4
March	40.5	40.1	53.7	33.6	74.1	54.7	45.2	19.4
April	26.6	56.0	39.7	39.5	50.0	62.3	58.0	54.9
May	31.1	59.5	30.5	35.0	39.0	70.4	45.1	
June	18.5	34.5	44.5	45.6	40.6	80.9	53.6	
July	43.2	28.9	18.7	49.0	47.6	91.7	36.8	
August	44.0	36.5	13.9	59.4	74.8	87.4	18.3	
September	35.3	34.1	6.8	43.3	55.7	49.3	9.3	
October	31.4	19.7	4.8	35.4	50.1	48.8	19.7	
November	17.4	25.7	5.7	35.7	63.0	70.7	6.6	
December	29.7	37.8	11.0	30.8	70.2	99.3	11.0	
Total ²	376.3	439.1	270.7	447.8	651.5	855.3	358.4	

¹Preliminary.²Figures may not add to total because of rounding.

Table 7.--U.S. imports of fish meal by country of origin, January-April, 1965-69 average, 1969, and 1970

Country of origin	1965-69 average		1969		1970 ¹	
	Thousand		Thousand		Thousand	
	short tons	Percent	short tons	Percent	short tons	Percent
Canada	15.7	9.0	21.2	13.4	24.7	21.3
Chile	15.0	8.6	21.6	13.7	7.1	6.2
Norway	12.6	7.2	1.8	1.1	1.7	1.5
Peru	127.7	73.0	109.9	69.6	81.5	70.3
Other	3.8	2.2	3.5	2.2	0.8	0.7
Total	174.8	100.0	158.0	100.0	115.9	100.0

¹Figures may not add to total because of rounding.

Table 8.--U.S. imports of fish meal as a percent of total fish meal available in the United States¹, by month 1963-70

Month	1963	1964	1965	1966	1967	1968	1969	1970
Percent								
January	88.9	93.6	83.3	84.5	88.0	97.3	90.7	82.4
February	93.2	93.9	89.8	91.6	91.9	94.6	87.6	82.3
March	93.8	92.8	93.4	85.7	93.7	92.4	90.6	78.9
April	76.0	87.4	77.8	77.8	83.3	84.2	79.8	88.8
May	43.6	65.0	54.8	63.3	69.4	78.7	58.6	
June	34.4	41.3	47.8	55.2	54.8	72.5	60.3	
July	52.6	39.0	27.2	57.3	56.7	67.4	47.8	
August	50.2	52.1	24.9	65.4	69.0	70.7	35.3	
September	58.8	59.9	24.4	65.1	73.3	62.5	20.6	
October	62.9	69.6	28.1	76.3	81.5	70.7	50.8	
November	56.5	70.6	32.0	65.3	80.4	83.3	34.2	
December	74.8	83.1	52.4	72.0	88.6	90.1	53.7	
Average ²	60.9	66.1	52.8	67.8	76.4	79.0	59.5	

¹Production and imports.

²Weighted average.

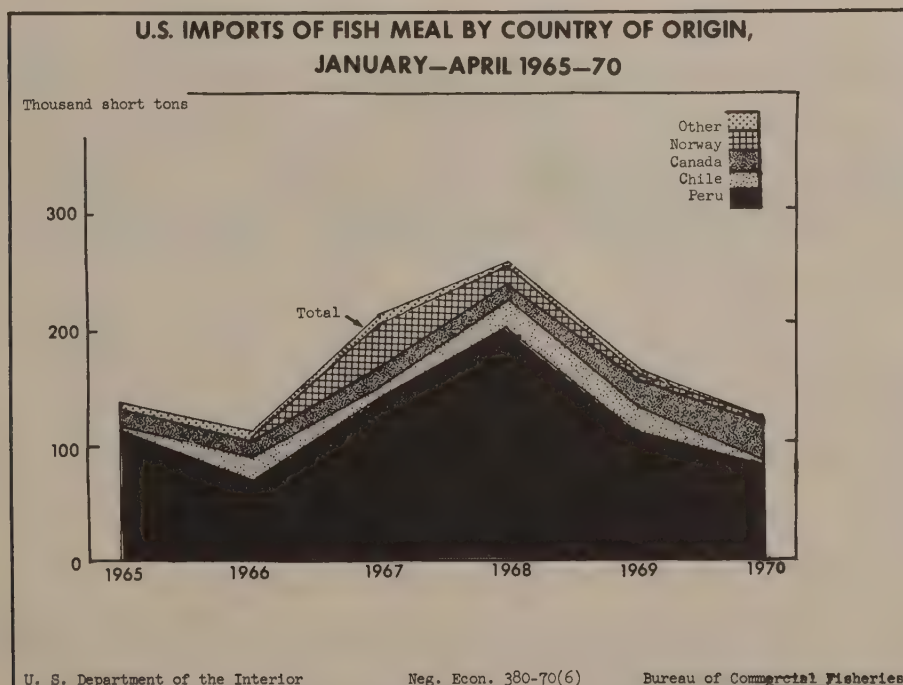


Figure 3

World Fish Meal Production
in January-March--Up from 1969

World production of fish meal in January-March 1970 was an estimated 1,077,200 metric tons (1,187,400 short tons)--up 12 percent from the same period last year and up 16 percent from the 1965-69 average (table 9). These comparisons do not include Mainland China, Japan, or the U.S.S.R. Major countries producing more in the first 3 months of 1970 than they did in 1969 were Peru, Norway, Denmark, and Canada. Denmark's fish meal production during the first quarter of 1970 was 58 percent above a year ago, and Canadian production was up about 13 percent.

FEO countries made about 94 percent of the reported world fish meal in the first quarter of 1970--compared to 88 percent during the same period a year ago. Peru alone

produced 70 percent of the world's fish meal--29 percent above last year. The United States made about 1 percent of the estimated world fish meal in the first quarter of 1970.

FEO Exports in January-March--
Up from 1969

FEO countries exported an estimated 759,200 metric tons (836,900 short tons) of fish meal in January-March--up 3 percent from the exports in the first 3 months of 1969 and up 14 percent from the 1965-69 average (tables 10 and 11). About 81 percent of the FEO exports were from Peru. Norway exported about 7 percent, South Africa and South West Africa about 5 percent, and Chile about 3 percent of the total FEO fish meal exports.

Peru exported 611,600 metric tons (674,200 short tons) in the first quarter of 1970--up 19 percent from

Table 9.--FEO¹ and total world production of fish meal, January-March, 1965-69 average, 1969, and 1970

Country	1965-69 average		1969		1970 ²	
	Thousand metric tons	Percent	Thousand metric tons	Percent	Thousand metric tons	Percent
Angola	15.4	1.9	24.2	2.8	22.0	2.2
Chile	56.5	6.8	65.5	7.7	59.0	5.8
Iceland	23.2	2.8	29.3	3.5	33.0	3.3
Norway	70.2	8.5	61.8	7.3	72.1	7.1
Peru	580.5	70.4	583.4	68.9	754.6	74.8
South Africa and South West Africa	79.6	9.6	83.0	9.8	68.7	6.8
Total FEO ³	825.3	100.0	847.2	100.0	1,009.4	100.0
Total world ⁴	931.6		962.3			
Percent FEO is of world		88.6		88.0		

¹Fishmeal Exporters Organization.

²Preliminary.

³Figures may not add to total because of rounding.

⁴FEO countries plus Belgium, Canada, Denmark, France, Sweden, United Kingdom, United States, and West Germany.

Table 10.--Total FEO¹ exports of fish meal, and FEO exports to the United States, by month, 1965-69 average, 1969, and 1970

Month	1965-69 average			1969			1970 ²		
	Total	FEO exports	to the United States ³	Total	FEO exports	to the United States ³	Total	FEO exports	to the United States ³
	FEO exports			FEO exports			FEO exports		
	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent
January	217.6	30.3	13.9	214.9	18.6	8.6	4215.9	12.2	5.6
February	214.0	27.1	12.7	244.7	18.9	7.7	4262.4	13.2	5.0
March	236.8	42.5	17.9	278.6	35.7	12.8	4280.9	11.2	4.0
April	228.5	41.4	18.1	280.4	47.8	17.0		45.4	
May	233.1	35.6	15.3	310.1	37.3	12.0			
June	225.1	44.2	19.6	239.8	44.8	18.7			
July	218.3	39.4	18.0	235.1	28.3	12.0			
August	174.3	40.1	23.0	161.3	9.1	5.6			
September	158.8	24.2	15.2	119.1	0.5	0.4			
October	170.9	23.0	13.5	148.1	10.1	6.8			
November	191.5	29.4	15.4	173.9	2.6	1.5			
December	227.5	36.2	15.9	154.3	6.1	4.0			
Total ⁵	2,496.4	413.5	16.6	2,560.3	259.8	10.1			

¹Fishmeal Exporters Organization: members are those countries listed in table 9.

²Preliminary.

³Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.

⁴Estimated.

⁵Figures may not add to total because of rounding.

Table 11.--Total FEO¹ exports of fish meal, and FEO exports to the United States, January-March, 1965-69 average, 1969, and 1970

Country	1965-69 average			1969			1970 ²		
	Total	FEO exports	to the United States ³	Total	FEO exports	to the United States ³	Total	FEO exports	to the United States ³
	FEO exports			FEO exports			FEO exports		
	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent	Thousand metric tons	Thousand metric tons	Percent
Angola	14.4	0.1	0.7	25.6	-	-	426.0	-	-
Chile	39.8	9.9	24.9	41.4	13.8	33.3	23.1	1.0	4.3
Iceland	27.9	-	-	13.2	-	-	410.0	-	-
Norway	83.7	10.7	12.8	83.9	-	-	51.0	1.6	3.1
Peru	452.7	89.2	19.7	514.4	59.4	11.5	611.6	34.0	5.6
South Africa and South West Africa	49.9	.3	.6	59.7	-	-	37.5	-	-
Total ⁵	668.4	110.1	16.5	738.2	73.2	9.9	759.2	36.6	4.8

¹Fishmeal Exporters Organization: members are those countries listed in the table.

²Preliminary.

³Based on imports of fish meal from FEO countries as reported by the U.S. Department of Commerce, Bureau of the Census.

⁴Estimated.

⁵Figures may not add to total because of rounding.

last year. In addition to the attractive world price of fish meal and the good catch of anchovy, exporters' expectations of Government export control in Peru contributed to the high volume of Peruvian fish meal sales during the early part of 1970. Reports from Peru indicated that heavy selling had been taking place prior to the Government export ban on April 10.

Only about 5 percent of total FEO exports went to the United States in January-March 1970--compared to 10 percent in 1969. The share of FEO exports to the United States in January-March during 1965-69 averaged 17 percent.

While FEO exports to the United States dropped in the first quarter of 1970, exports to EEC ^{4/} countries and Japan, Mexico, Poland, Spain, and Venezuela increased over last year (table 12). EEC countries received an estimated 42 percent of FEO exports during January-March 1970--compared with 35 percent a year ago. Well over half of the FEO exports to the EEC countries went to West Germany. West Germany's imports of fish meal increased in spite of high prices and the fact that since December 25, 1969, feed standards have not required minimum contents of fish meal in mixed feed. This indicates a strong demand for fish meal.

West Germany took more of Peru's exports of fish meal in the first quarter of 1970 than any other country. About 24 percent of Peru's exports went to West Germany--compared to 17 percent a year ago. Peru's exports of fish meal to Europe during the first quarter of 1970 were about 424,700 metric tons (472,600 short tons) or 18 percent over the first quarter a year ago. Less than 6 percent of Peru's exports of fish meal came to the United States--compared with 14 percent a year ago.

FEO Stocks on April 1--4 Percent Below a Year Ago

Member countries of FEO held an estimated 590,700 metric tons (651,100 short tons) of fish meal on April 1, 1970,--down 4 percent from the amount held at the same time a year ago and down 11 percent from the 1965-69 average of that date.

Total FEO stocks on April 1, 1970, were 51 percent above the low January 1 stocks of 391,500 metric tons (431,600 short tons). The increase from the first of the year is mainly attributed to the increase of Peruvian stocks. Peru's stocks of fish meal on April 1 this year were only slightly less than a year ago. They were about 75 percent of the total FEO stocks. Preliminary estimates put May 15 fish meal stocks in Peru to about 668,600 metric tons (737,000 short tons)--up 36 percent from a year ago.

April 1 stocks of South Africa and South West Africa were down 28 percent from stocks held at the same time last year, and Chile's stocks were down 23 percent from last year.

Fish meal stocks held by Norway on April 1 were up 20 percent from last year, they were over 9 percent of the total FEO stocks on April 1.

Demand

Broiler Placements--Up 11 Percent from Last Year

The demand for fish meal is mainly derived from the demand for broiler feed which in turn is determined by the demand for broilers. Therefore, the number of broiler chicks placed on feed is one of the indicators of potential fish meal demand. The quantity of fish meal demanded by the feed

^{4/} European Economic Community;
member countries are: Belgium,
France, West Germany, Italy,
Luxemburg and the Netherlands.

Table 12.--FEO¹ exports of fish meal to EEC (European Economic Community), the United States, and other countries, January-March, 1968, 1969, and 1970

Country	1968		1969		1970 ²	
	<u>Thousand</u> <u>metric tons</u>	<u>Percent</u>	<u>Thousand</u> <u>metric tons</u>	<u>Percent</u>	<u>Thousand</u> <u>metric tons</u>	<u>Percent</u>
EEC						
Belgium	18.1	2.2	18.2	2.5	13.2	1.7
France	18.8	2.3	19.3	2.6	22.2	2.9
Germany, West	165.2	20.0	131.1	17.8	180.5	23.8
Italy	29.4	3.6	25.4	3.4	35.0	4.6
Netherlands	64.2	7.8	63.0	8.5	69.1	9.1
Total	(295.7)	(35.9)	(257.0)	(34.8)	(320.0)	(42.1)
United States	165.3	20.0	73.0	9.9	36.6	4.8
Other						
Australia	8.6	1.0	10.4	1.4	5.1	.7
Czechoslovakia	15.0	1.8	13.7	1.9	7.4	1.0
Finland	9.6	1.2	5.5	.7	5.4	.7
Germany, East	33.0	4.0	35.0	4.7	24.4	3.2
Hungary	9.7	1.2	12.6	1.7	11.4	1.5
Japan	40.8	4.9	19.2	2.6	50.3	6.6
Mexico	16.8	2.0	20.7	2.8	27.0	3.6
Poland	26.6	3.2	33.1	4.5	37.0	4.9
Spain	24.9	3.0	35.0	4.7	39.1	5.2
Sweden	11.7	1.4	15.6	2.1	13.1	1.7
United Kingdom	104.6	12.7	103.6	14.0	55.5	7.3
Venezuela	7.3	.9	3.4	.5	7.5	1.0
Yugoslavia	8.6	1.0	20.2	2.7	16.7	2.2
Other	46.1	5.6	80.0	10.8	102.7	13.5
Total ³	(363.3)	(44.1)	(408.0)	(55.3)	(402.6)	(53.1)
Total	824.3	100.0	738.2	100.0	759.2	100.0

¹Fishmeal Exporters Organization.

²Export figures for Angola and Iceland are estimates.

³Figures may not add to total because of rounding.

Table 13.--FEO¹ fish meal stocks held April 1, 1965-69 average, 1969, and 1970

Country	1965-69 average		1969		1970 ²	
	<u>Thousand</u> <u>metric tons</u>	<u>Percent</u>	<u>Thousand</u> <u>metric tons</u>	<u>Percent</u>	<u>Thousand</u> <u>metric tons</u>	<u>Percent</u>
Angola	7.6	1.1	13.1	2.1	³ 4.2	0.7
Chile	32.2	4.8	49.5	8.0	³ 38.1	6.4
Iceland	17.0	2.6	16.3	2.7	24.3	4.1
Norway	74.1	11.1	46.5	7.6	55.7	9.4
Peru	492.7	74.2	449.7	73.2	440.2	74.6
South Africa and South West Africa	41.2	6.2	39.3	6.4	28.2	4.8
Total ⁴	664.8	100.0	614.3	100.0	590.7	100.0

¹Fishmeal Exporters Organization: members are those countries listed in the table.

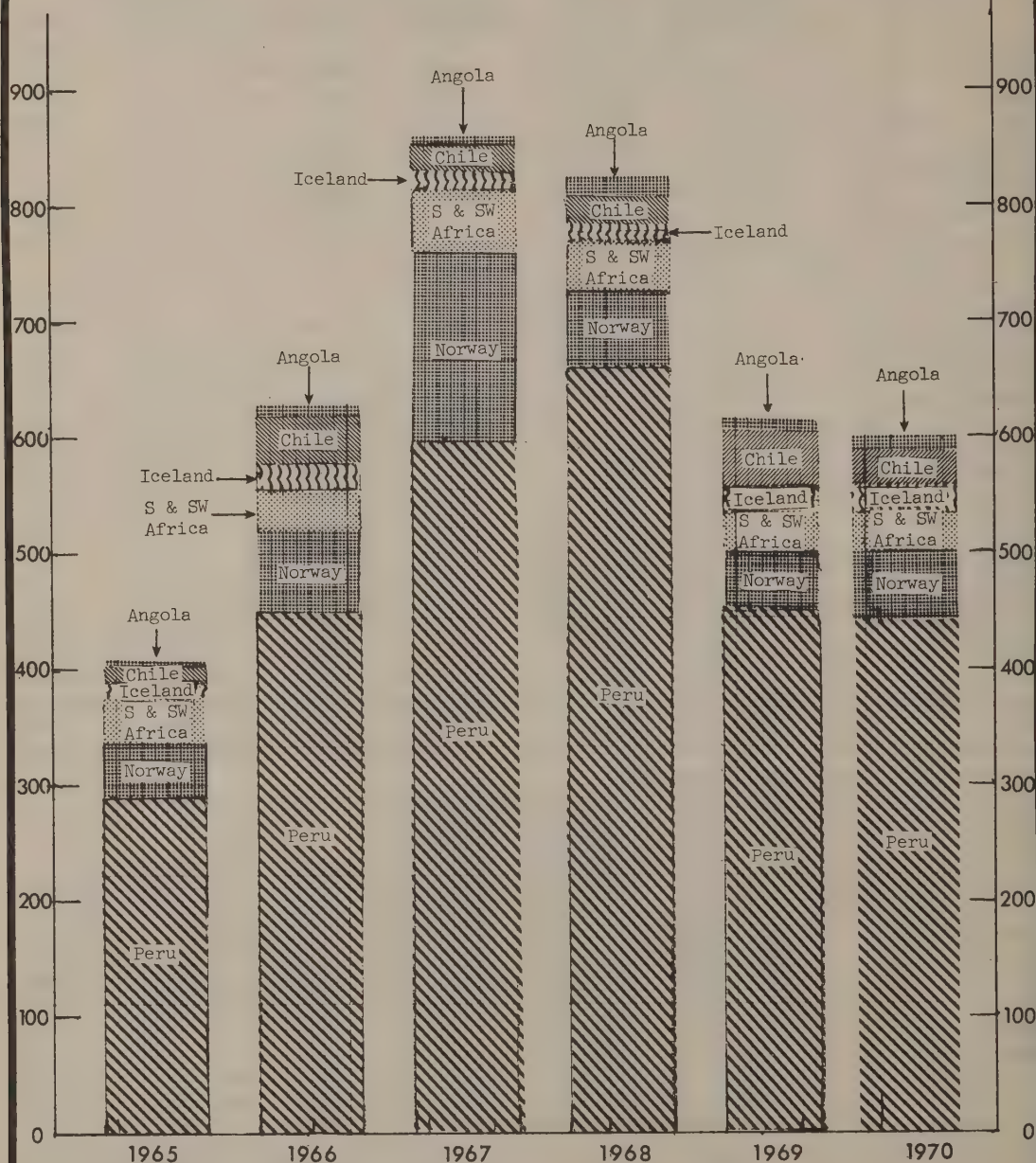
²Preliminary.

³Estimated.

⁴Figures may not add to total because of rounding.

FEO¹ FISH MEAL STOCKS HELD APRIL 1, 1965-70

Thousand metric tons



^{1/} Fishmeal Exporters Organization; members are those countries listed in the figure.

Figure 4

manufacturers, however, is greatly influenced by the price of fish meal and the prices of competing feed products, primarily soybean meal.

About one billion broiler chicks were placed on farms in the leading broiler-producing States in the first 4 months of 1970 (table 14). These placements were 11 percent more than in the same period in 1969 and 19 percent more than the 1965-69 average. This rate of increase was the highest since 1961 for the 4-month period.

Because of the apparent excess production, average prices paid for broilers at the farm from February to April were below prices for the same months last year. The average price for April was 13.7 cents per pound in 1970, 1 cent less than a year ago. The May average price was 13.9 cents per pound--6 percent below last year.

In spite of the increase in broiler chick placements in January-April, the apparent use of fish meal during this period was less than a year ago. This decrease was due to the relatively high prices of fish meal and high ratios between the price of fish meal and the prices of competing feed ingredients. The need for fish meal substitutes is

reflected in the high demand for synthetic amino acids. Production of lysine and methionine has been running at capacity levels.

Soybean Meal Prices--Declining from January High

Soybean meal is the major competitor of fish meal in the market of protein feed ingredients. The average price of soybean meal (50 percent solvent) at Decatur, Ill., was \$97.60 per ton in January 1970, the highest average price since the summer of 1966, but declined during February-April (table 15). Demand for soybean meal was strong in the beginning of the year; however, exports of soybean meal during March and April were lower than a year ago and contributed to the price decline. The price of soybean meal averaged \$89 per ton for the first 4 months in 1970--about 12 percent above the average price for the same period in 1969. Even though prices of soybean meal averaged above last year, prices of fish meal held close to the record level of the end of the last year, and resulted in a high ratio between the price of Peruvian fish meal and the price of soybean meal (table 16).

Table 14.--Broiler chick placements in 22 States, and average broiler price at the farm, by month, 1967-70

Month	1967		1968		1969		1970 ¹	
	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price	Chicks placed	Broiler price
	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.	Million	Cents/lb.
January	192.0	13.9	196.4	13.5	201.2	14.3	288.0	14.8
February	204.1	15.4	199.5	14.6	211.8	15.0	240.2	14.3
March	217.6	14.3	261.0	14.6	282.9	15.3	251.0	14.8
April	272.9	13.8	215.1	14.2	234.0	14.7	256.4	13.7
May	217.6	13.3	274.1	14.6	295.9	14.8	317.2	13.9
June	214.8	13.5	218.7	15.0	235.3	15.2		
July	259.6	14.7	208.5	15.5	220.4	17.3		
August	199.9	12.9	248.5	14.8	265.4	16.5		
September	224.7	12.6	178.3	14.1	204.5	15.6		
October	175.0	12.2	184.6	12.8	204.8	14.7		
November	185.7	11.5	242.1	13.6	270.6	14.2		
December	230.8	11.6	194.8	13.4	219.4	13.5		
Total placements ²								
and average price ³	2,594.7	13.4	2,621.7	14.1	2,846.2	15.2		

¹Preliminary.

²Figures may not add to total because of rounding.

³Weighted average.

Sources: Commercial Broilers: Annual Production and Weekly Placements, U.S. Department of Agriculture, Statistical Reporting Service, and Poultry and Egg Situation, U.S. Department of Agriculture, Economic Research Service.

Table 15.--Average monthly price of soybean meal¹ at Decatur, Ill., 1964-70

Month	1964	1965	1966	1967	1968	1969	1970
Dollars per short ton							
January	85.40	75.40	85.00	89.30	81.30	79.50	97.60
February	82.60	77.20	86.20	85.20	80.20	78.40	95.60
March	82.30	76.10	80.00	83.70	80.40	80.10	79.60
April	80.00	78.40	82.40	80.70	80.90	81.30	83.10
May	74.20	77.70	89.00	80.10	81.90	84.90	78.90
June	73.20	85.10	101.00	87.20	89.10	88.20	
July	72.90	86.00	104.10	85.00	92.00	86.20	
August	71.00	80.50	106.10	86.90	94.50	84.10	
September	77.10	89.20	97.90	87.60	95.50	82.70	
October	76.80	80.80	91.50	78.20	85.30	82.10	
November	72.70	84.50	86.40	78.10	79.40	76.90	
December	75.50	78.30	92.70	79.40	79.40	90.40	
Average ²	77.00	80.75	91.85	83.45	85.00	82.90	

¹50 percent protein, bulk.²Simple average.

Source: Feed Market News, U.S. Department of Agriculture, Consumer and Marketing Service, Grain Division.

Table 16.--Ratio of Peruvian fish meal price¹ to soybean meal price², by month, 1963-70

Month	1963	1964	1965	1966	1967	1968	1969	1970
Price ratio								
January	1.67	1.56	1.88	2.04	1.66	1.48	1.75	2.02
February	1.60	1.61	1.88	1.98	1.64	1.48	1.80	1.92
March	1.60	1.61	1.88	2.07	1.61	1.44	1.75	2.42
April	1.60	1.58	1.89	1.86	1.62	1.42	1.80	2.41
May	1.61	1.70	1.98	1.75	1.59	1.61	1.90	2.56
June	1.55	1.72	1.96	1.54	1.50	1.57	1.90	
July	1.49	1.78	2.01	1.55	1.55	1.56	2.01	
August	1.40	1.87	2.25	1.52	1.51	1.46	2.05	
September	1.42	1.75	2.04	1.56	1.47	1.39	2.08	
October	1.53	1.82	2.29	1.56	1.59	1.51	2.36	
November	1.51	1.95	2.20	1.68	1.55	1.65	2.63	
December	1.55	1.87	2.30	1.64	1.52	1.74	2.26	
Average	1.54	1.71	1.92	1.70	1.56	1.54	1.89	

¹F.o.b. East Coast ports for 65 percent protein meal, bagged, as quoted at New York City.²Wholesale at Decatur, Ill., for 50 percent solvent meal, bulk.

Prices

Fish Meal Prices Continued

High

Average monthly prices of fish meal in the United States continued relatively high during the first few months of 1970. Prices of bagged menhaden meal, as quoted by brokers at New York City, increased from the January average of \$195.90 per ton, f.o.b. East Coast points to \$197.50 in April and May (table 17 and fig. 5). This increase in price of menhaden meal accompanied an increase in the price of Peruvian meal, although the low menhaden catch may have also influenced the price increase. Prices of tuna and mackerel meal also increased during this period.

Strong fluctuations in the price during the first 4 months of 1970 indicate shifts in the many factors that underlie fish meal business

transactions. In January, the average price of bagged Peruvian fish meal was \$197.50 per ton, f.o.b. East Coast ports. The price declined to \$183.50 per ton in February--a drop of \$14. Average price for Peruvian fish meal in March increased by \$9.20, and in April the price reached an average of \$200.50 per ton. This price was about 36 percent higher than the average April price a year ago. High prices and market instability can be attributed mainly to two major factors.

One of these factors was strong demand for fish meal in Europe in relation to short supplies in the world market during the first few months of 1970. Total supplies on the world market declined sharply in 1969, and stocks were low at the beginning of 1970. The building up of stocks in producing countries, and strong demand in Europe, kept the prices up in spite of high production.

Table 17.--Average monthly price of menhaden meal¹, f.o.b. East Coast and Gulf points, 1965-70

Month	1965	1966	1967	1968	1969	1970
	Dollars per short ton					
January	144.15	² 179.80	153.10	² 131.00	149.25	195.90
February	146.25	² 172.55	² 154.00	² 131.00	153.00	196.50
March	150.00	² 170.60	² 154.00	² 131.00	153.00	189.90
April	153.00	² 163.00	135.00	² 131.00	² 154.00	197.50
May	156.00	² 153.80	135.80	² 131.00	174.00	197.50
June	160.90	160.35	139.00	149.00	172.60	
July	170.25	164.00	137.40	149.65	171.90	
August	172.10	169.00	137.10	149.00	168.90	
September	175.00	166.20	136.75	145.00	171.60	
October	185.40	160.00	136.00	141.60	189.30	
November	186.00	151.15	² 132.00	140.50	200.10	
December	186.00	153.10	² 131.60	145.10	199.25	
Average ³	168.50	161.05	136.55	145.30	174.30	

¹60 percent protein, bagged, as quoted by brokers at New York City.

²Nominal price as presented in the Oil, Paint and Drug Reporter.

³Average weighted by monthly production of menhaden meal.

AVERAGE MONTHLY PRICE OF MENHADEN MEAL ^{1/} **AT NEW YORK CITY, 1967-70**

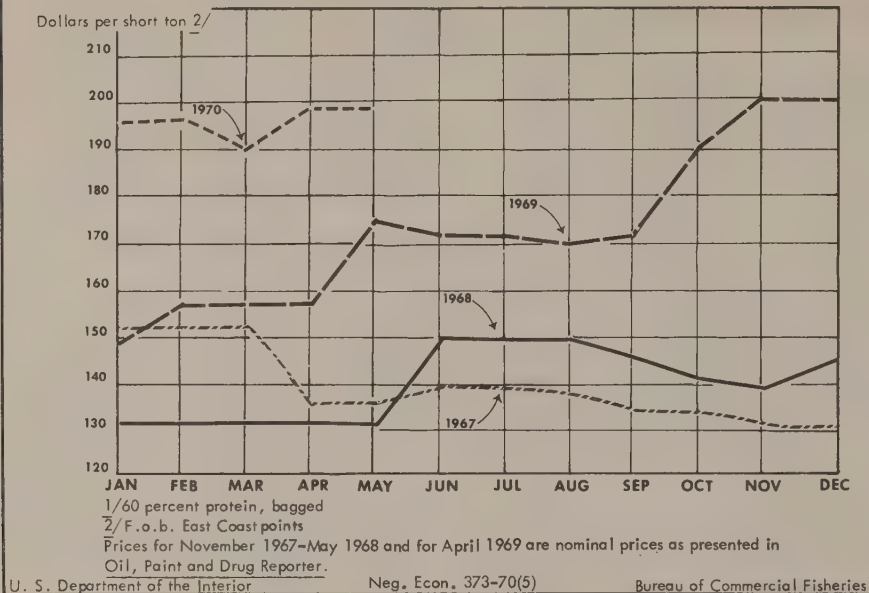


Figure 5

AVERAGE MONTHLY PRICE OF PERUVIAN FISH MEAL ^{1/} **AT NEW YORK CITY, 1967-70**

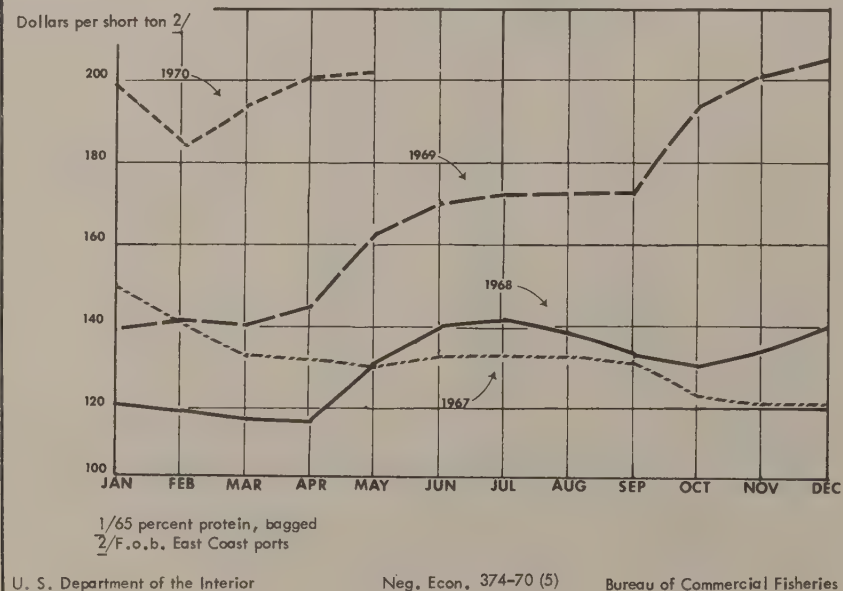


Figure 6

Table 18.--Average monthly price of tuna and mackerel meal¹ at Los Angeles, 1965-70

Month	1965	1966	1967	1968	1969	1970
Dollars per short ton						
January	136.20	174.60	144.00	123.00	132.60	172.50
February	137.40	174.60	144.00	124.80	135.00	172.50
March	139.20	167.40	142.80	124.80	133.80	² 177.00
April	141.60	148.80	139.80	115.50	127.80	177.00
May	146.40	141.00	127.20	117.00	138.60	² 181.00
June	150.60	138.00	124.80	121.50	145.80	
July	157.20	141.60	123.00	127.50	147.00	
August	166.20	144.00	123.00	132.00	147.00	
September	174.00	144.00	121.80	132.00	150.00	
October	174.60	144.00	120.00	132.00	168.00	
November	174.60	144.00	120.00	132.00	177.00	
December	174.60	144.00	120.60	132.00	172.20	
Average ³	157.75	148.10	129.60	125.85	146.15	

¹60 percent protein, bagged, as quoted by brokers at Los Angeles.

²Tuna, mackerel, and anchovy meal.

³Average weighted by monthly production of tuna and mackerel meal.

Table 19.--Average monthly price of Peruvian fish meal¹, f.o.b. East Coast ports, 1965-70

Month	1965	1966	1967	1968	1969	1970
Dollars per short ton						
January	141.60	173.00	148.20	120.20	139.50	197.50
February	144.90	170.90	140.00	119.00	141.00	183.50
March	142.70	165.80	134.50	116.00	140.50	192.70
April	148.40	153.75	130.50	115.20	146.80	200.50
May	153.75	155.40	127.70	131.90	161.00	202.10
June	166.50	155.50	131.25	140.00	168.00	
July	172.90	161.00	131.60	143.20	173.50	
August	181.00	161.00	131.50	137.90	172.10	
September	182.50	152.25	128.90	132.75	172.00	
October	184.90	143.10	124.30	129.20	193.40	
November	186.00	144.80	121.00	131.00	202.40	
December	180.25	152.50	121.00	138.10	204.00	
Average ²	154.65	156.40	130.15	130.95	157.10	

¹65 percent protein, bagged, as quoted by brokers at New York City.

²Average weighted by monthly imports of Peruvian fish meal.

Another factor influencing the price of fish meal was the uncertainty about the availability of fish meal from Peru, the major supplier of world fish meal. Peruvian production of fish meal was high in January and the first half of February. A new Ministry of Fisheries, which began operations on February 1, closed anchovy fishing from February 16 to March 15, thus restricting the output of fish meal. In March the Ministry announced State plans to reorganize the marketing of the fish meal. The Government marketing company EPCHAP (Empresa Publica de Comercializacion de Harina y Aceite de Pescado) was formed in April, and on July 1 was scheduled to replace the four major companies that market fish meal. EPCHAP actually began marketing on May 25. To have fish meal available to start the operations of EPCHAP, the Government imposed various export restrictions for fish meal, including an export ban from April 17 to 27. Additional disturbance was caused by rumors about various amounts of fish meal available for exports before the takeover of EPCHAP.

OUTLOOK: JULY-SEPTEMBER 1970

Demand

The quantity of fish meal that will be used in the United States in the third quarter of 1970 will depend greatly on the prices of fish meal and competing feed ingredients during that period. At the end of June, prices for 65 percent Peruvian fish meal at New York were \$185 to \$195 f.o.b. East Coast and Gulf ports. Prices for 60 percent menhaden meal in New York were \$185 to \$190 f.o.b. East Coast and Gulf Coast points.

In comparison with the prices of fish meal, prices of competing feed ingredients, especially soybean meal,

affect the use of fish meal in the United States. Relation between the apparent use of fish meal (production and imports) and the ratio of fish meal price to soybean meal price is shown in figure 7.

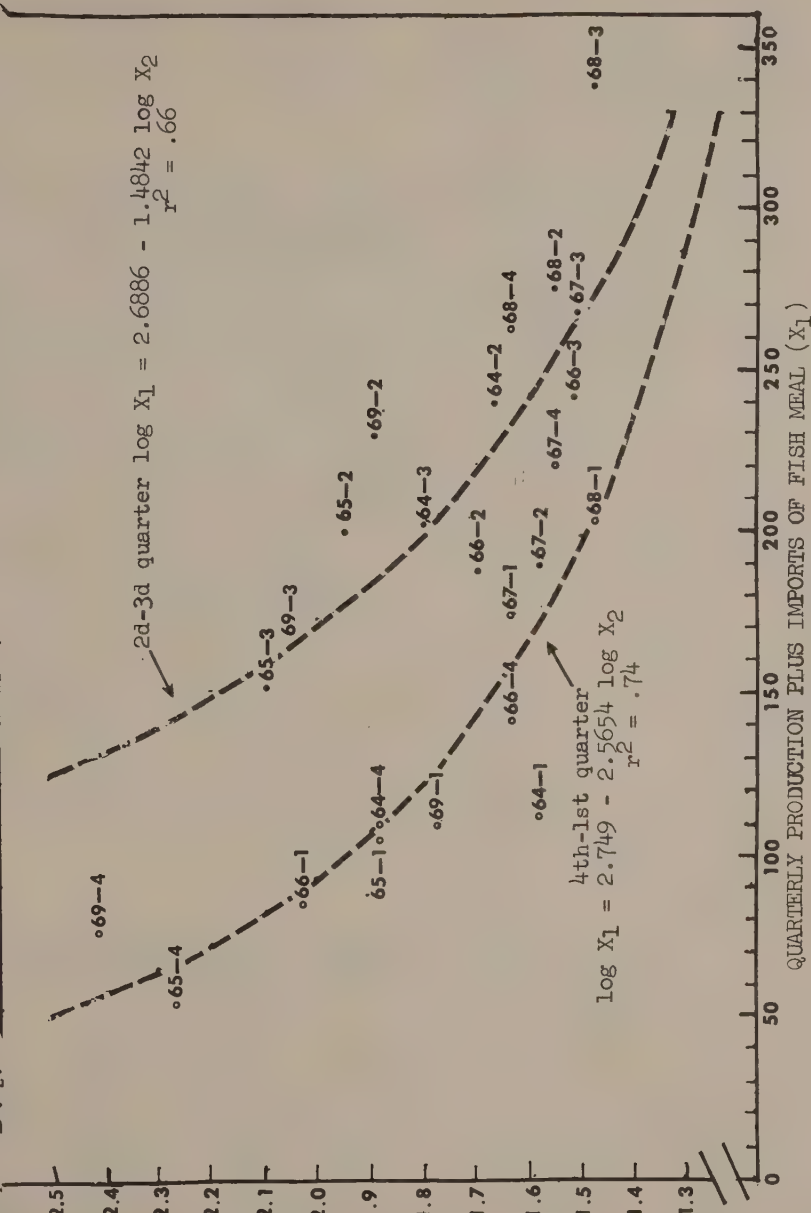
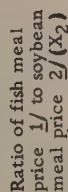
The data in figure 7 indicate that the relation of fish meal use (production plus imports) to price in the second and third quarter is different from the relation during the first and fourth quarters of the year. This seasonal variation is due to the number of broiler chicks on feed in different seasons and because part of the domestic production during second and third quarter is stored.

If the ratio of the price of Peruvian fish meal in New York City to the price of soybean meal in Decatur continues to be 2.35:1, as it was at the end of June, figure 7 suggests that the United States will use about 135,000 tons of fish meal (including additions to stocks) during the third quarter of 1970. If the ratio between prices of fish meal and soybean meal dropped to an average of 2.10:1 during July-September of this year and placements of broiler chicks continues to exceed by about 5 percent the number of placements in last year's third quarter, we estimate that about 145,000 to 185,000 tons of fish meal will be used (including additions to stocks) in the United States during July-September 1970. The apparent use a year ago was 173,900 tons.

Supply

Menhaden catch in June was reported to be much above last year in Chesapeake Bay and Western Gulf areas. Based on information on menhaden catch and fish meal production during the first half of the year we estimate that 80,000 to 100,000 tons of fish meal will be produced in the United States during the third quarter of 1970. Menhaden

RELATION BETWEEN U.S. FISH MEAL PRODUCTION AND IMPORTS AND THE RATIO OF FISH MEAL PRICE TO SOYBEAN MEAL PRICE



1/ Peruvian, 65 percent protein, bagged f.o.b. East Coast. 2 Wholesale, 50 percent solvent meal, bulk at Decatur, Illinois.

Numbers on chart indicate year and quarter of observation.

U.S. Department of the Interior

Neg. Econ. 372-70(5)

Bureau of Commercial Fisheries

Figure 7

meal will comprise about 70 to 75 percent of the total production of the third quarter.

If the third quarter fish meal price averages about \$195 per ton we estimate that 55,000 to 75,000 tons will be imported--compared to the latest 5-year average of 132,400 tons for this period. If prices average below \$195, quantities imported would be greater. Fish meal prices for the third quarter of this year are difficult to estimate because they are greatly influenced by the uncertainty of Peruvian supply. All Peruvian-produced fish meal--about 60 to 70 percent of world total--is now sold through the Government marketing company EPCHAP. This sales organization aims to establish a stable price for fish meal. The asking prices of EPCHAP are reported to be around \$200 per metric ton c&f Europe, thus indicating no reduction in the price level. However, fish meal stocks in Peru on June 1 were estimated at 600,000 to 650,000 metric tons--compared to 444,400 metric tons a year ago. These large stocks would tend to depress prices.

Latest reports on the recent earthquake in Peru indicate that the damage to most of the fish meal plants in Chimbote--several of the biggest producers have plants there--is not substantial. Much of the equipment was put out of line, but the buildings are standing. Plants are expected to be operational again in September. However, damage to the hydroelectric power station, which normally supplies power to the industry in Chimbote, may restrict fish meal production in the area until power becomes adequate.

We estimate that Peru's total exports during the third quarter of 1970 will be around 300,000 metric tons--compared to 286,300 metric tons in the same period of 1969 and 391,000 metric tons in July-September 1968.

FISH SOLUBLES

REVIEW: JANUARY-APRIL 1970

Supply

Supplies of Fish Solubles in January-April--About the Same as Year Ago

Total fish solubles available (excluding stocks) in the United States during January-April 1970 were 8,700 tons--down 1 percent from the same period a year ago (table 20) and down 13 percent from the 1965-69 average. Most of the fish solubles were produced domestically.

Production of Fish Solubles--3 Percent Below 1970

The United States produced about 8,300 tons of fish solubles in the first 4 months of 1970--down about 3 percent from 1969 and down 18 percent from the 1965-69 average. About one-fifth of the solubles was made from menhaden, and 84 percent of menhaden solubles was produced in the Gulf Coast area.

Imports of Fish Solubles During January-April, Up from Last Year

The United States imported 424 tons of fish solubles in the first 4 months of 1970--12 times the amount of imports during the same period a year ago but about one-fourth of the 1965-69 average imports for January-April period. Eighty-eight percent of January's total imports of 373 tons came from Peru. The rest of the imports for January-April came from Canada. There were no imports of fish solubles in April.

Demand

Prices of menhaden solubles, as quoted by brokers in New York City, increased during the first 4 months of 1970 from the January average of \$51.25 per ton to \$52.80 per ton,

f.o.b. East Coast and Gulf plants. The average price in May was \$54.70 per ton--up 15 percent from a year ago. Increasing prices of fish solubles and larger imports indicate a relatively strong demand for fish solubles during these months.

Table 20.--Total fish solubles available in the United States: production plus imports, by month, 1963-70

Month	1963	1964	1965	1966	1967	1968	1969 ¹	1970 ¹
Thousand short tons								
January	1.7	1.9	1.8	1.6	2.0	0.6	0.8	1.3
February	1.7	1.4	2.8	1.8	1.2	0.7	1.4	1.7
March	3.1	1.2	1.3	3.8	2.1	2.3	1.5	2.1
April	4.3	4.3	3.9	5.0	6.6	4.1	5.1	3.6
May	16.1	13.2	10.9	9.4	7.2	6.3	11.1	
June	14.4	19.1	18.0	15.3	13.6	10.8	12.5	
July	15.5	19.5	18.7	14.1	12.5	14.9	11.9	
August	19.0	14.8	18.2	12.8	12.3	11.8	11.0	
September	11.7	10.1	9.0	9.9	6.8	9.0	12.7	
October	7.8	5.3	6.8	5.4	5.1	6.1	5.8	
November	5.1	4.0	5.9	5.9	5.5	4.3	4.6	
December	6.7	3.0	2.6	2.6	3.5	3.2	3.8	
Total ²	107.3	97.8	99.9	87.7	78.3	76.6	82.2	

¹Preliminary.

²Figures may not add to total because of rounding.

Table 21.--Average monthly price of menhaden solubles¹, f.o.b. East Coast plants, 1965-70

Month	1965	1966	1967	1968	1969	1970
Dollars per short ton						
January	58.60	66.25	80.85	60.50	51.25	51.25
February	59.40	66.50	79.00	63.75	51.25	50.90
March	61.25	66.70	70.75	61.25	49.40	51.75
April	56.25	68.75	64.60	56.25	47.75	52.80
May	53.75	68.75	64.00	54.05	47.50	54.70
June	55.75	68.75	64.40	53.75	49.75	
July	56.85	68.75	64.05	53.50	51.25	
August	60.00	68.75	62.85	52.50	49.40	
September	61.25	72.50	61.25	51.90	48.75	
October	63.95	78.75	60.75	51.50	50.60	
November	65.25	79.25	60.00	51.55	51.25	
December	66.25	81.90	60.00	51.25	52.50	
Average ²	58.30	70.75	63.25	52.90	49.60	

¹In tank cars; prices quoted by brokers at New York City.

²Weighted average.

AVERAGE MONTHLY PRICE OF MENHADEN SOLUBLES ^{1/} **AT NEW YORK CITY, 1967-70**

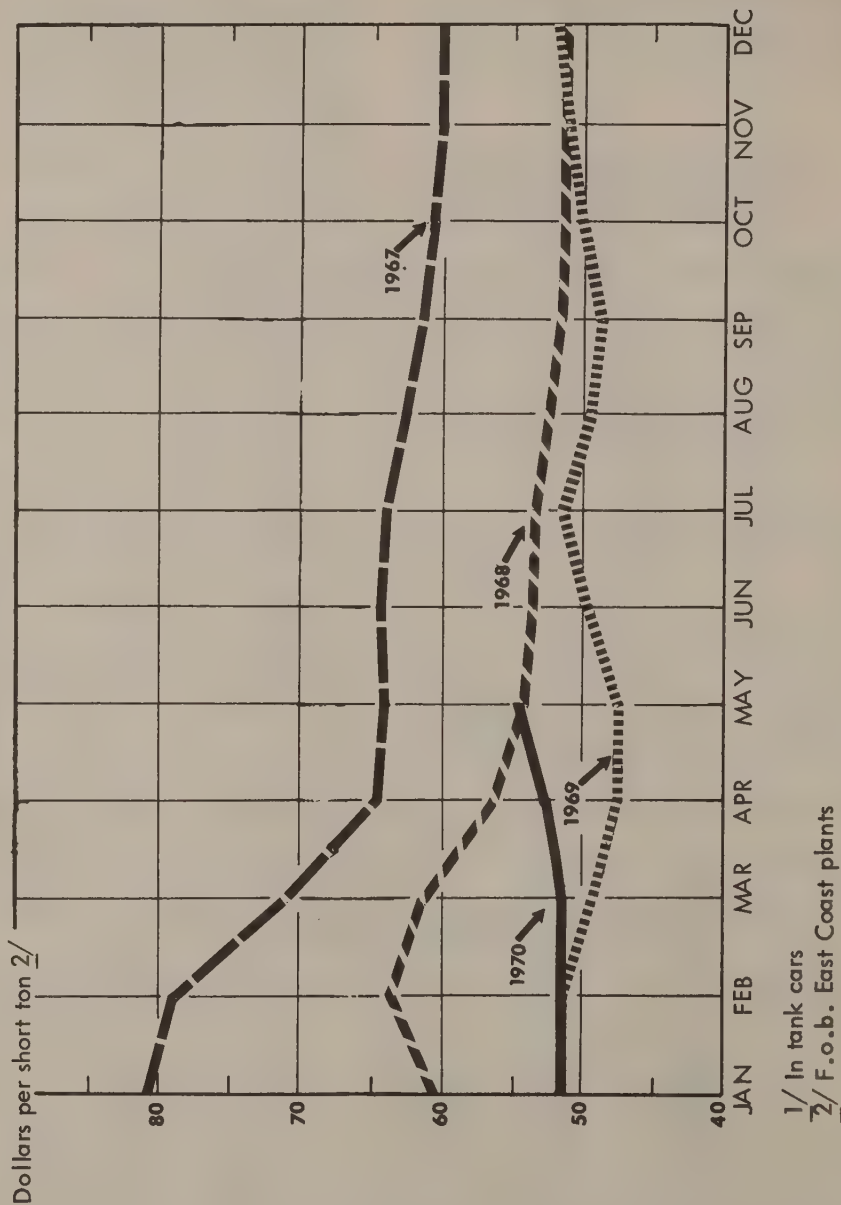


Figure 8

OUTLOOK: JULY-SEPTEMBER 1970

Demand

The present prices of fish solubles compared to the prices of fish meal appear to favor the use of solubles in feed rations. In May, the margin between the average price of menhaden meal and the average price of menhaden solubles was \$142.80 per ton--compared to \$126.50 a year ago. Although the prices of fish solubles are likely to increase towards the third quarter of this year, price margins between fish meal and fish solubles may continue to be so high that feed mixers will want to include more solubles in their feed rations during July-September 1970 than a year ago.

Supply

Based on production in the first part of the year, our estimates are that 30,000 to 50,000 tons of fish solubles will be produced in the third quarter of 1970. About 80 to 85 percent of domestic solubles will come from menhaden. Imports of fish solubles in July-September 1970 are

expected to exceed the negligible amount imported during the same period a year ago.

FISH OIL

REVIEW: JANUARY-APRIL 1970

Supply

Fish Oil Stocks on May 1--Down
6 Percent from the Same Time
Last Year

Stocks of fish oil in the United States at the beginning of May 1970 were 36.6 million pounds--down 6 percent from 1969 and down 37 percent from the 1965-69 average for May 1 stocks (table 22). Stocks on May 1, 1970, were about 46 percent up from April 1 stocks of 25.0 million pounds--the lowest stocks on record. Heavy exports at the end of 1969 reduced U.S. stocks of fish oil to an exceptionally low January 1 level and contributed to the low stocks in the first 4 months of 1970.

Table 22.--U.S. stocks of fish oil at the beginning of the month, 1964-70¹

Month	1964	1965	1966	1967	1968	1969	1970 ²
-Million pounds-							
January	96.9	70.9	100.4	99.4	80.0	104.6	39.9
February	60.4	68.6	85.4	97.2	83.3	95.6	42.0
March	47.0	55.2	75.0	90.8	61.0	67.3	35.0
April	42.2	50.4	60.5	62.2	55.8	53.9	25.0
May	43.9	54.6	60.3	73.4	64.4	39.1	36.6
June	46.7	69.0	63.1	97.4	69.1	61.0	
July	55.5	80.9	64.7	100.7	82.4	68.3	
August	66.8	103.3	80.4	102.4	103.6	78.3	
September	78.0	136.2	87.9	103.2	122.5	66.5	
October	87.7	110.9	111.0	95.9	132.9	77.8	
November	66.9	101.7	102.1	102.4	123.0	98.4	
December	75.2	111.4	120.0	99.4	104.1	58.1	
Average	63.9	84.4	84.2	93.7	90.2	72.4	

¹Includes mammal oil other than sperm oil, and includes hydrogenated fats and other fats and oils "in process."

²Preliminary.

Source: Current Industrial Reports: Fats and Oils, Series M20K,
U.S. Department of Commerce, Bureau of the Census.

U.S. Fish Oil Production for
January-April--Down 36 Percent
from Last Year

The United States produced 5.0 million pounds of fish oil during the first 4 months of 1970--down 36 percent from 1969 and down 37 percent from 1965-69 average for January-April (tables 23 and 24). The decline was due to low production of menhaden oil in April. Only 2.6 million pounds of menhaden oil was produced in April 1970--down 42 percent from 1969 and down 45 percent

from 1965-69 average for the same month. About 53 percent of the fish oil was made from menhaden in the four-month period--compared to about 58 percent last year (table 24).

Demand

Domestic Use of Fish Oil--Same
as Year Ago

Fish oil is used in the United States mainly in protective coatings, especially in dip paints.^{5/} The United

Table 23.--U.S. production of fish oil by month, 1963-70

Month	1963	1964	1965	1966	1967	1968	1969	1970 ¹
	- Million pounds -							
January	0.5	0.5	0.6	0.4	1.2	0.6	0.6	0.6
February	.4	.2	.5	.2	.6	.3	.6	.5
March	.4	.7	.7	1.0	.9	.6	.6	.7
April	6.5	4.4	10.6	5.5	3.6	4.2	6.1	3.2
May	33.5	29.9	23.2	19.3	9.4	10.3	20.8	
June	28.2	42.9	41.6	34.7	20.5	22.0	28.0	
July	29.0	33.8	41.6	29.6	21.6	36.8	30.0	
August	34.6	28.4	37.8	22.5	22.4	31.1	26.7	
September	21.2	19.8	18.1	20.5	13.6	27.4	28.9	
October	15.0	5.6	9.5	7.8	9.3	21.0	13.8	
November	10.1	8.3	8.2	16.4	13.5	12.3	8.5	
December	6.4	5.7	3.1	6.8	5.8	6.5	5.1	
Total	185.8	180.2	195.5	164.7	122.4	173.1	169.8	

¹ Preliminary.

Table 24.--U.S. production of fish oil by raw material source, January-April, 1965-69 average, 1969, and 1970

Source	1965-69 average		1969		1970 ¹	
	<u>Million</u>		<u>Million</u>		<u>Million</u>	
	<u>pounds</u>	<u>Percent</u>	<u>pounds</u>	<u>Percent</u>	<u>pounds</u>	<u>Percent</u>
Menhaden	4.7	59.8	4.5	57.8	2.6	52.8
Tuna, mackerel, and anchovies	1.3	16.9	1.4	17.3	1.2	24.6
Unclassified	1.8	23.3	1.9	24.9	1.1	22.6
Total ²	7.9	100.0	7.8	100.0	5.0	100.0

¹ Preliminary. ² Figures may not add to total because of rounding.

Note: Percents are calculated with unrounded numbers.

^{5/} Used for example, by the automotive industry, which makes parts corrosin resistant by dipping them in such paint.

States used 11.2 million pounds of fish oil in January-April 1970--same amount as a year ago but down 7 percent from the 1965-69 average (table 25). These figures include marine mammal oil other than sperm whale oil.

Exports of Fish Oil--Below Last Year But Above Average

The United States exported 29.7 million pounds of fish oil during the first 4 months of 1970--down 45 percent from 1969 but up 15 percent from 1965-69 average for January-April period (tables 26 and 27). The decline of U.S. fish oil exports was mainly due to low stocks and small production.

European countries continued to be major buyers of U.S. fish oil during the first 4 months of 1970, although the shares of individual countries were different from a year ago. About 9.3 million pounds or nearly one-third of the January-April exports of fish oil went to Sweden--compared to about 16 percent a year ago. Netherlands took only 23 percent of the exports whereas last year she took more than half of the January-April exports. West Germany received about 3 million pounds of fish oil from the United States during January-April this year--compared to more than twice that amount a year ago. However, total fish oil imports of the Netherlands and West Germany during the first 4 months of 1970 were higher than a year ago. Peru was the major supplier of these imports.

Nearly all of the fish oil exported by the United States was menhaden oil.

Supply

Menhaden Oil Price Record High

The average price of menhaden oil as quoted by brokers at New York City

was about 8.8 cents per pound f.o.b. East Coast and Gulf plants in January (table 28 and fig. 9). The April average price was 9.7 cents per pound, f.o.b. Gulf plants. Prices continued to increase, and May quotations averaged 10.3 cents per pound--the highest monthly average on our records of 18 years and nearly double the average price in May last year.

Prices of fish oil in Europe also increased; the price in May was about twice the price a year ago. High prices and increased imports in Europe indicate an increased demand for fish oil.

OUTLOOK: JULY-SEPTEMBER 1970

Demand

The price of fish oil has increased faster than the prices of most competing vegetable oils. If this relation continues into the third quarter, the use of substitute oils may increase over the use of fish oil. Based on the ratios of the price of fish oil to the prices of crude tung, tall, linseed, and soybean oils, we estimate that the use of fish oil in July-September will be 6 to 8 million pounds. In the third quarter of 1969, the United States used 8 million pounds of fish oil.

Quarterly U.S. exports of fish oil vary greatly. Third quarter exports, for example, have varied from 10.5 million pounds in 1963 to 89.2 million pounds in 1963. July-September exports were 51.9 million pounds last year. Main factors causing the fluctuations in exports are changes in the supplies of the countries that compete with the United States, prices of fish oil compared to competing oils, and variation in the U.S. supplies of

Table 25.--Industrial use of fish oil in the United States, by month, 1963-70¹

Month	1963	1964	1965	1966	1967	1968	1969	1970 ²
-Million pounds-								
January	5.0	3.9	3.2	2.4	2.9	2.6	1.8	3.1
February	3.8	3.9	3.2	3.5	2.8	2.6	3.1	2.9
March	3.9	3.9	3.3	3.3	2.8	3.0	3.1	2.4
April	4.0	4.6	3.4	3.5	4.1	2.5	3.2	2.8
May	4.2	4.2	3.0	3.7	3.1	2.6	1.9	
June	4.7	4.0	4.0	3.8	3.3	2.5	3.9	
July	5.0	3.4	3.2	2.7	3.0	2.7	2.2	
August	4.6	4.7	4.5	3.7	3.1	2.2	2.5	
September	4.2	4.2	4.3	3.9	3.2	2.8	3.3	
October	5.0	3.8	3.9	2.5	2.4	2.5	3.0	
November	3.7	3.6	4.4	2.7	2.5	2.4	3.3	
December	4.0	3.5	4.1	3.1	2.6	1.6	2.8	
Total ³	52.1	47.7	44.5	38.8	35.8	30.0	34.1	

¹Includes mammal oil other than sperm oil.²Preliminary.³Figures may not add to total because of rounding.Source: Current Industrial Reports: Fats and Oils, Series M20K, U.S. Department of Commerce, Bureau of the Census.

Table 26.--U.S. exports of fish oil by month, 1963-70

Month	1963	1964	1965	1966	1967	1968	1969	1970 ¹
-Million pounds-								
January	0.1	0.2	0.1	2.3	17.9	0.9	4.0	11.4
February	2.4	23.5	.1	4.2	²	6.0	8.9	.4
March	44.4	.2	11.4	9.9	10.5	12.6	19.8	13.9
April	28.5	22.8	.1	.1	²	.1	21.1	4.3
May	22.1	9.3	.3	17.8	.1	²	8.8	
June	.3	.1	18.1	12.9	.8	²	15.5	
July	29.3	40.5	16.2	19.5	2.3	.1	19.3	
August	37.5	9.6	21.2	6.1	24.8	7.0	24.7	
September	22.4	14.2	13.5	²	10.2	3.4	7.9	
October	41.9	19.8	10.8	4.3	5.7	11.4	5.7	
November	.1	.1	.2	.1	2.2	1.8	33.3	
December	33.3	11.1	11.8	.1	2.3	21.8	27.0	
Total	262.3	151.4	103.8	77.3	76.8	65.1	196.1	

¹Preliminary.²Less than 50,000 pounds.

fish oil. Taking these factors into consideration, we estimate that U.S. exports of fish oil probably will be about 40 to 50 million pounds in the third quarter of this year.

Supply

U.S. production of fish oil is expected to be about 70 to 90 million pounds in the third quarter of 1970. Most of this oil will come from

menhaden. Domestic production of fish oil in the third quarter of last year was 85.6 million pounds, and the latest 5-year average for July-September was 81.7 million pounds. We expect stocks at the beginning of the third quarter to be at about 75 million pounds. Since domestic use plus exports are expected to be about 46 to 58 million pounds in the third quarter and production about 70 to 90 million pounds, stocks probably will increase to about 100 million pounds at the end of the third quarter.

Table 27.--U.S. exports of fish oil by country of destination, January-April, 1965-69 average, 1969, and 1970¹

Country	1965-69 average		1969		1970 ¹	
	<u>Million</u> <u>pounds</u>	<u>Percent</u>	<u>Million</u> <u>pounds</u>	<u>Percent</u>	<u>Million</u> <u>pounds</u>	<u>Percent</u>
Canada	0.5	1.9	0.4	0.7	0.1	0.3
Netherlands	9.6	36.9	31.6	58.7	7.1	23.9
Sweden	10.3	39.6	8.4	15.6	9.3	31.3
United Kingdom	1.5	5.8	-	-	1.5	5.1
West Germany	2.5	9.6	6.7	12.5	3.0	10.1
Other	1.6	6.2	6.7	12.5	8.7	29.3
Total	26.0	100.0	53.8	100.0	29.7	100.0

¹Preliminary.

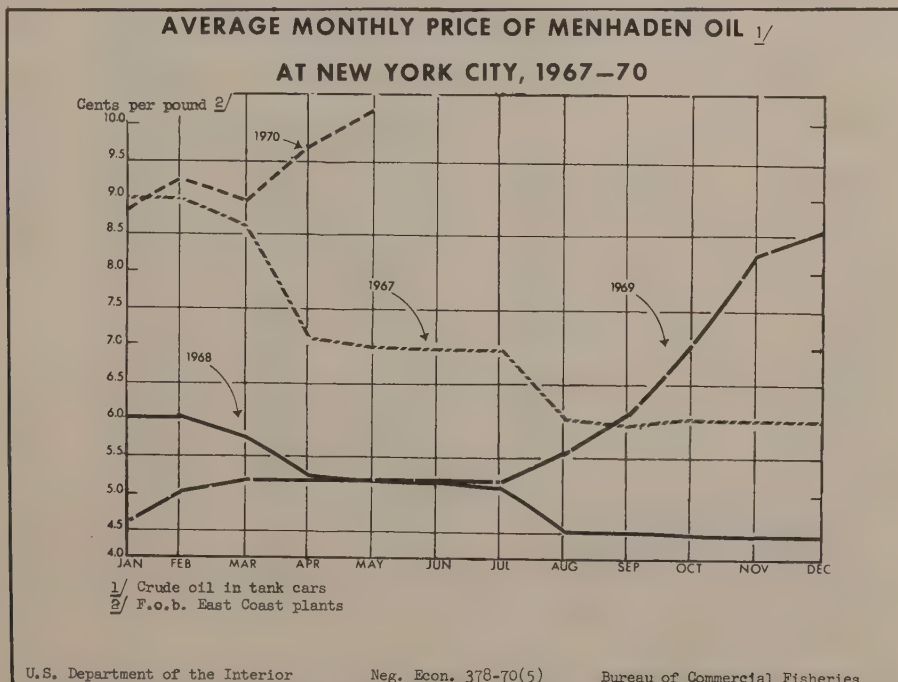


Figure 9

Table 28.--Average monthly price of menhaden oil¹, f.o.b. East Coast plants, 1965-70

Month	1965	1966	1967	1968	1969	1970
	-Cents per pound-					
January	9.15	9.50	8.90	6.00	4.70	8.75
February	9.50	9.70	8.90	6.10	5.00	29.25
March	9.50	9.75	8.60	5.75	5.20	38.90
April	9.50	9.75	7.20	5.35	5.30	39.70
May	9.45	9.75	6.90	5.25	5.25	310.30
June	9.15	9.60	6.95	5.25	5.20	
July	8.95	9.40	6.70	4.85	5.25	
August	9.30	9.00	6.00	4.55	5.65	
September	9.50	9.45	5.80	4.40	6.10	
October	9.50	9.45	6.00	4.45	6.75	
November	9.50	9.20	6.00	4.40	8.20	
December	9.50	8.90	6.00	4.40	8.50	
Average ⁴	9.25	9.40	6.40	4.70	5.75	

¹Crude oil in tank cars; prices quoted by brokers at New York City.

²Asking price.

³F.o.b. Gulf Coast plants.

⁴Weighted average.

Table 29 --Average monthly price of tuna and mackerel oil¹ at Los Angeles, 1965-70

Month	1965	1966	1967	1968	1969	1970
	-Cents per pound-					
January	6.60	8.00	6.50	3.50	3.25	3.25
February	7.00	7.85	6.50	3.25	3.10	3.50
March	7.10	7.85	6.60	3.25	3.00	3.65
April	7.25	7.60	6.25	3.25	3.00	4.10
May	7.35	7.50	6.25	3.25	3.00	
June	7.60	7.35	6.00	3.25	3.00	
July	8.00	7.10	5.75	3.25	3.00	
August	8.35	7.00	4.60	3.25	3.10	
September	8.50	7.00	3.75	3.25	3.25	
October	8.60	7.00	3.75	3.25	3.25	
November	8.60	7.00	3.75	3.25	3.00	
December	8.10	7.00	3.75	3.25	3.00	
Average ²	8.00	7.30	5.20	3.25	3.10	

¹Crude oil, f.o.b. plant; prices quoted by brokers at Los Angeles.

²Weighted average.

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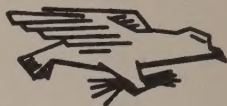
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